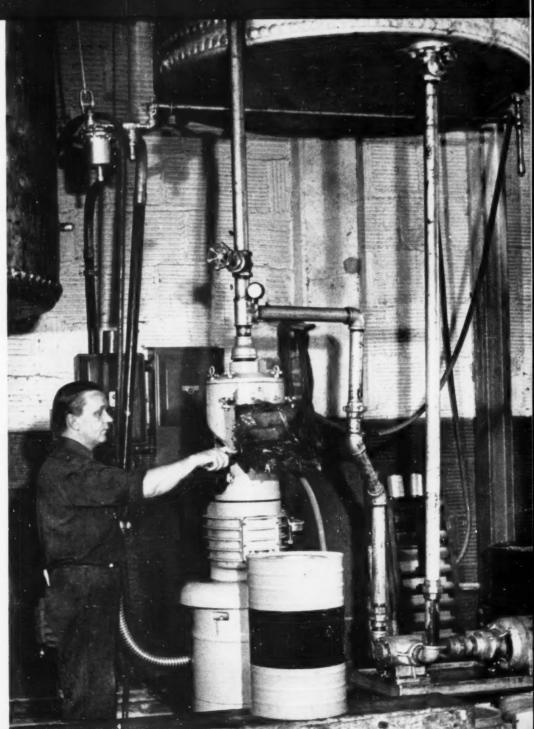
# NLGI Social Control of National Lubricating Grease Institute

Your Responsibility
To Marketing

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21st NLGI Annual Meeting Is Largest

Page 14







Continental's artists translate ideas into packages that sell

# MAY WE TAILOR A STEEL CONTAINER FOR YOU?

To Continental people, your bulk products are personalities. And we do our best to handtailor containers that exactly fit their needs.

As one of the few steel container manufacturers who also make tin cans, we have an experience in lithographing-on-metal that's hard to equal. Our artists are masters at adapting designs to look well on pails, drums and handi cans of varying sizes and shapes. Our platemakers and pressmen have the most modern of equipment with which to work.

No two steel container users have exactly

the same problems. From long experience we have built up a list of package services that our customers have found helpful. We'd like a chance to hand-tailor these services to your particular requirements.



### CONTINENTAL CAN COMPANY



Continental Can Building, 100 E. 42nd Street, New York 17, N. Y.

EASTERN DIVISION 100 E. 42nd St., New York 17 CENTRAL DIVISION 135 So. La Salle St., Chicago 3 PACIFIC DIVISION
Russ Building, San Francisco 4





### HERE'S A HOLE 188,000,000 FEET DEEP!

One hundred and eighty-eight million feet down!...
that's the total feet of hole your American Petroleum
Industry drilled in 1952. It represents the 48,800 new
wells they completed throughout the United States.
So what?...So it means a greater reserve of oil than

ever before in U.S. history. It's oil needed to meet the all-time peak demand of the American consumer... estimated as high as 8,022,000 barrels a day in the last quarter of 1952!... and it cost the industry 4 billion

dollars to produce these truly outstanding results!

Cities Service drilled 375 miles of holes itself in 1952, carrying on exploration activities during the year that extended over 26 states, and into Canada and Mexico, and produced 43,000,000 barrels of

liquid petroleum. Cities Service is proud to play its part in this tremendous effort to keep our standard of living the highest in the world...to keep America vital and strong for its role as the leader for world peace.



An important part of the American Oil Scene



## Emery's 112 Years of Experience go into the manufacture of 12-HYDROXYSTEARIC ACID ...HYDROGENATED CASTOR OIL TOO!!

When you order raw materials for Lithium-base greases or any grease, take advantage of Emery's first-hand" knowledge of fatty acids, of their behavior in use, their composition, all factors that can have an effect on your end product. Often Emery Research has the answer...or is prepared to get it.

Going one important step further, Emery tests, checks and rechecks quality of every Emery Fatty Acid before it ever reaches your plant. That's why you get uniform performance, consistent quality every time you specify an Emery Fatty Acid.



Fatty Acids & Derivatives Plastolein Plasticizers Twitchell Oils, Emulsifiers

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WRITE TODAY for descriptive booklet on Hyfac 2142 Hydrogenated Castor Oil and Hyfac 442 12-Hydroxystearic Acid.



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Gentlemen: Please send us your new bulletin on Hyfac 2142 Hydrogen-ated Castor Oil and Hyfac 442 12-Hydroxystearic Acid.

Name\_ Title Company\_

Address\_ Zone\_\_State

# Presidents pa

### RICHES



You are richer this Christmas Season if during the past year you have shared the Joys of Friendship with old friends and added new friends to your treasure chest, and have recognized that unnecessary kindnesses are far more important than the necessary ones.

You are richer if you have achieved joy in your work which, in turn, has stimulated unusual interest and effort with resulting personal satisfaction, knowing that failure is the only thing that can be achieved without effort and that effort is essential to material progress.

You are richer if you have given of your time and talent towards the betterment of your community being always aware that a keen personal interest in such matters is vitally necessary for the continued preservation of our democratic ideals and way of life, always keeping in mind that where the community ends the State begins.

You are richer if your aspirations reach upward without losing contact with the ground, and your appreciation of family, home, and the Almighty carries with it a continuing sense of joyful responsibility.

May Christmas and the New Year bring you riches in friendship, work satisfaction, community interest, good health, and joyful living!

MERRY CHRISTMAS
HAPPY NEW YEAR!

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### ABOUT THE COVER

The Warren Refining and Chemical Company of Cleveland, Ohio, has successfully used Morehouse Industries Vertical High Speed Mills for "Bentone" lubricant manufacture since production of the lubricant was started about four years ago. During that time, millions of pounds of "Bentone" lubricant have been produced with Morehouse equipment by Warren.

The mill pictured is one of those in operation at Warren. It is a Model B-2005 operating at 5400 rpm and powered by a 40 horsepower motor. Experience has shown that very little maintenance is required on this equipment—even when operating continuously.

The product shown being processed is "Plastilube," a "Bentone" lubricant. A centrifugal pump delivers a constant flow of slurry to the mill at a pressure of 20 to 25 lbs. per square inch at the grinding face. The pump is equipped with bypass to the kettle above so that any variance in pressure will be automatically compensated for by allowing the excess to return to the kettle.

Adjustment of rotor/stator clearance can be made without stopping. An external hand wheel is provided for easy adjustment of the rotor element to the desired position. Adjustments to 1/1000 of an inch may be made and duplicated. Different types of rotor/stator plates are available for products requiring special milling.

Versatility is demonstrated by the fact that Warren produces "Bentone" lubricants using base oils varying from 60 to 2500 S.U.S. at 100°F. and in consistencies varying from semifluid to NLGI No. 3.

# Your Responsibility to Marketing

### The Big Change

TO AMERICAN INDUSTRIES

Dear Sirs:

By 1960, please arrange to be making 30 per cent more goods than you made for me in 1950.

I expect a growth of about 20 million people in my family, the same as in the past decade. Part of my order is because of them. Part is to increase my standard of living.

If possible, arrange more leisure time for me. I do not wish to work longer hours to pay for increased purchases.

You will, of course, find me new products better than the old. You have done this in the past, but please increase your efforts.

Very truly yours,

THE AMERICAN PUBLIC

This letter is imaginary, but the facts aren't. The letter appeared in a recent General Electric advertisement in LIFE magazine. It's a portent of things to come. It summarizes what FORTUNE magazine calls "The Changing American Market" and what Frederick Lewis Allen describes as "The Big Change." 2

The marketing picture is undergoing a drastic change! This change will vitally affect your profits and way of doing business. As alert businessmen you'll be interested in these facts:

- U.S. is becoming one-class market of prosperous middle-income people.
- Family units with \$4,000 to \$7,500 in real disposable income (adjusted for inflation and taxes) now comprise 35% of the total. Their number has increased by 44% since 1947.
- 3. Real disposable income per capita has more than doubled in the last 50 years. It is up 12% since 1947.
- Despite the high cost of living and loving, American couples are having twice as many second babies as they did in 1940.
- 5. Population is increasing faster than it has in 40 years. Since I started talking five minutes ago there are 25 more people in the U.S. than when I started. There'll be 300 more in the next hour (a good share of which will come into this world after I've finished talking.)
- 6. Americans are changing into a nation of suburbanites. Since 1947, population has increased 15 million, but population of suburbs is up 17 million. In 1929, 60% of population lived in big cities or farms; today nearly 60% live in suburbs, small towns.

Of all these observations, most of which came from a recent survey by FORTUNE, one fact is particularly significant: the narrowing of the gulf between the rich and poor. The titan of American industrialists, Andrew Car-

by W. H. Garbade, President Deep Rock Oil Corporation Tulsa, Oklahoma

This paper was delivered at the NLGI Annual Meeting and is the first of a contemplated series of marketing articles designed for marketing members.

negie, made \$23,000,000 profit for the year 1900. Tax free! Average annual wage of the American worker that year was \$400 to \$500. Carnegie's income was 20,000 times greater than that of the average American then. (This fact is noted in Allen's "THE BIG CHANGE.") Today the typical corporate president takes home in salary about seven times as much as his average subordinate.

### Life in 1963

Let's look ahead 10 years. Is there reason to believe the change is over? Have the changes of the past 10 years been the mark left by two world wars? No, say thoughtful prognosticators. Experience can be a rough teacher and war is the hardest kind of experience. But we can thank World War II for proving one economic fact—that the U.S. could maintain its material living standards while devoting half of its productive effort to destructive ends. What economist now breathes who would dare embrace the old theory that our standard of living must suffer when the same people turn their same energies to production for peace?

The National Planning Association estimates \$425 billion gross national product by 1963 compared with \$360 billion this year.

We do know population is going to affect the market considerably. Population growths have buffaloed our best guessers. The biggest mistake made by the guessers was that our population rise would start tapering. How wrong can you get? The Census Bureau, with its vast experience missed the boat. In 1947, this bureau predicted a 1950 population of 147,986,000. It was 150,697,000. They missed it a million a year Now for the next 10 years, we have the Commerce department estimating a population increase of 15,000,000. They've been conservative in the past. Even this increase doesn't tell the entire consumer story. Among other things, people are living longer to-day. Metropolitan Life Insurance Company figures the avearge U.S. male baby today will live to be 66. That's 18 years longer than the 1900 baby was expected to live.

<sup>1.</sup> FORTUNE p. 98, August 1953; p. 98 September 1953.

<sup>2. &</sup>quot;THE BIG CHANGE," Harper & Brothers, publishers, New York, 1952.

The infant girl now is expected to live to be 71. In the next 10 years, we'll see these figures stretched to where we're living even longer. What a bonanza for Gerber's—strained foods at both ends of the age scale!

Not only will car registrations benefit materially from the rapid increase of population, but I am of the firm conviction that the increase of car registrations will continue to outstrip the rate of increase in population. Here are my reasons: The success of toll roads in all sections of the country forecasts a great acceleration in their development. In addition, I am confident there will be more gigantic public road and parking projects springing up throughout the country, all designed to make inter-city and intra-city travel more pleasant. Also, the dispersal of population from downtown areas will further reduce the bottlenecks blocking expansion of car population.

All this means more petroleum products, including greases, will be needed every year for all these new cars and trucks and buses and for the additional heavy machinery necessary to their manufacture—and for transportation elements used in handling the raw material used. The slope of the curve for the next five-year, the next ten-year period, is—upward.

All these population figures point up one vital fact: A fantastically increased mass market. In 1900, for example, 76,000,000 Americans lived 50 years for a total of 3.8 billion man-years. In 1963, a total of 170,000,000 Americans should live about 70 years for 11.9 billion man-years. Human mass doesn't constitute a great market for goods necessarily, as India and China have proved. But the appetite of Americans is insatiable and their productivity is unlimited—thanks to our unique religious, political, and economic climate where the individual enjoys freedom unlimited.

### How Is the Big Change Affecting the Customer?

What do these changes, past and future, mean to those of us in the petroleum product marketing field? What effect will they have on the customers upon whom we depend?

Our customers are becoming used to ... and demanding more comfort and simplification. Signs of the times: polyethylene squeeze bottles, power steering, rain-sensitive convertibles, automatic car jacks, air conditioning, all-weather motor oil, premium gasolines with complex additives, frozen foods, automatic dishwashers. Customers demand the best quality, easiest operation, lowest cost. But if the product is the best and the easiest to run, we can sell the customer even if our product is more expensive.

As I see it, there is need for a change in former attitudes. Once again, the customer is right. There is a long chain from us to the customer, with marketing in the middle, but we are vitally concerned. I'm not worried that we will find it difficult to adjust to the changing market. But I'm anxious to help see that the word is spread to groups such as this. The story can't be told too often. I'm not concerned about our being able to adjust to this changing market because the oil industry and its related businesses have always been progressive as Ole Berg so effectively portraved. And as he has pointed out, it will continue to

be progressive. For statistical proof of the oil industry's magical growth, we can turn to government figures.

The Bureau of Mines' statistics show the petroleum industry supplies 57% of the total power used by America today. Once coal held the upper hand, but it's slipping. Oil and gas continue to mount in the nation's field of fuel power. All of us have a right to feel proud of this. The industry has faced as many obstacles as any in its pursuit of progress. Colonel Drake had to go only 69 feet to find oil in 1859. Today, production is nearing 20,000 feet-almost four miles. Once a man with adventurous spirit and a good spiel could drum up enough in loans to wildcat for himself. Today an oil company thinks little of investing \$200,000 in a wildcat, realizing the averages are 9 to 1 against this wildcat showing a good healthy trace of oil. A few years ago, oil was broken down into gasoline, kerosene, and lubrication oil . . . and little else; today hundreds of products can be refined from oil at even the small refineries and the world of petrochemicals have come along to add thousands of new products. TIME magazine just ran a story in which a leading analyst attributes America's survival of World War II to its tremendous petroleum output. Strides of the industry are tremendous. The future is nearly frightening to conceive. One thing we know: Progress is inevitable.

### How Can We Meet the Changing Market Picture?

How can we meet this changing marketing picture? What is our responsibility to the marketing branch of the oil industry? Let's get specific. Suppose the motorist were confronted in fuels with as many choices as there are in lube oils and greases; there'd be a different grade fuel for:

Varying temperatures Low gear vs. high gear Different compression ratios Motorcycles Motorboats Trucks Buses

(For practically all of these purposes, the customer recognizes only two choices—premium and regular.)

Absurd? No. As it is today, a conversation between a customer and a service station attendant sometimes runs like this:

Check your oil?
Yes.
You need a quart, Mister.

What brand d'you like?

What do they cost? Oh, 15c, 20, 30, 40, 45c . . . up to . . .

Hmmmmmm. Well . . . . Want Heavy Duty or-

Want Heavy Duty or— What's the difference?

I dunno.

OK, give me the best you got. What Number 10, 20, or 30?

By this time the customer is about like the West Texan who walked along Michigan boulevard. A drop of rain hit him in the face. The shock was so great it took three buckets of sand in his face to revive him.

# General Mills Aliphats Increase Grease Yields \*\*\*\* Offer Uniform Performance \*\*\*\* Reduce Production Time

Production time operates in your favor when you make lubricating greases with fatty acids. More and more manufacturers report they save time and money on grease production by using General Mills Aliphats (fatty acids).

Why? Because of fast "kettle turnover." Fatty acids react faster than whole fats. This means greater productivity of existing plant, equipment and personnel.

Currently, the trend among manufacturers of lubricating greases is toward purer raw materials. That's why many grease makers... formerly satisfied with whole fat tallows... are now using General Mills Aliphats—singly or in combination. These manufacturers appreciate General Mills' ability to make fatty acids of the quality they want.

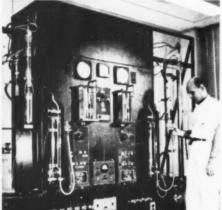
Grease makers can no longer stand the expense of improperly balanced fat compositions. Instead, they are turning to modern fatty acid technology to get special acid mixtures tailormade for specific needs.

There's a best way for you to get the fat compositions you need, too. Make your selections from a variety of specialized Aliphats, fatty acids that are made carefully all the way from choice of tallows to final processing. For additional information on General Mills fatty acids, please mail the coupon below.



Aliphat (Fatty Acid) 26-C, for example, is one of the General Mills fatty acids designed to meet your grease making needs. Aliphat 26-C contains all of the component fatty acids that occur in the natural tallow. Its light color and uniform composition make it of special interest to manufacturers of lime greases.

Also, the relatively high stearic acid content of Aliphat 26-C compared to mixed animal greases, for instance, results in a higher yield of calcium grease. It makes lubricating greases with higher oxygen stability, reducing tendency to gum, because of low concentration of polyunsaturated acids. The almost instantaneous and com-



General Mills chemist separating and analyzing fatty acids in the laboratory with a high temperature fractional distillation column.

plete saponification of Aliphat 26-C offers you an easy way to reduce operating and equipment costs.

In addition to Aliphat 26-C, General Mills has several fatty acids of interest to grease makers. If you wish

technical data on General Mills Aliphats for grease making, just mail the coupon below.



Remember, besides faster production time, fatty acids can also increase your grease yields, add greater uniformity of performance, and give you improved stability.

Fatty acids just don't react in the hit-or-miss manner so common to whole fat tallows. The fatty acids react faster and more completely. They contain approximately five percent more reactive materials than whole fats. They also conform more precisely to your production requirements—allowing special modifiations.

If you do not have technical information on the fatty acids

available from General Mills, please mail the coupon below.

There is an ALIPHAT for your specific need.

ADDRESS.....

# Gếnềral Mills

CHEMICAL DIVISION

KANKAKEE, ILLINOIS

Please send me technical information on General Mills Aliphats (fatty acids).

NAME\_\_\_\_\_

FIRM

CITY

progress thru research

To get closer home: What about lubricating grease? I'm told that the first hint of lubrication that historians have unearthed concerns the use of crushed olives and greased planks by Egyptians to move huge stones about 1650 B.C. That's 3600 years ago. Now Egyptians didn't have to fret about SAE numbers, myriad container sizes, complicated lubrication charts or other things which confuse today's grease jockey at the service station. It's my idea we need to start working back toward the simplicity of 1650 B.C. We can't reduce it to crushed olives and greased planks, but I do believe real simplification and consideration for the consumer is in order.

### Your Responsibility to Marketing

Here are a few ideas I think that we in the petroleum and petroleum products field can give some thought to. And, we can help mold the future in matters of simplification and convenience. This is your responsibility to marketing! We share this responsibility with the API Lubrication Committee, the automobile manufacturers, and other technical trade groups. I suggest:

- 1. Eliminate as many different kinds of grease as feasible.
- Develop the use of fewer but standard sized containers.
   The NLGI-API joint committee has done an excellent job but probably can go even farther in this important field.
- Promote the further use of all-purpose automotive greases.
- 4. Campaign constantly urging automotive engineers to simplify the lubrication systems of today's trucks and cars—fewer fittings, fewer specified grades of lubricants, fewer specified types of lubricants. Among other things, this would help us put the station operator and garage mechanic in a white collar. Because of the nature of his job, the man who actually does the grease job probably won't reach white collar status on the job, but we can help dignify his job and make him a better worker if we keep this in mind.
- Simplify lubricant terminology. Let's take the mystery out of the business. We can't expect our grease jockeys to be mechanical engineers. For one thing, operators can't afford to pay them mechanical engineer salaries.

I can't keep from thinking of this grease jockey when I think of simplification. That fellow is really a key man in our setup. We need to cater to him, in a sense. Among other things, he wants the job of greasing made as simple as possible. Frequently, he's little more than a young man just out of school or waiting for school to start, or a fellow who is a general handy man who has held a number of jobs and is killing time while looking for still another job. He's the hardest kind of help to hold. If a job opens up for \$2 a week more, he's usually off. And to help him do the job, automobile manufacturers, through pressure from men in your jobs, can help this fellow. The lube points need to be accessible, easily found, simple to use. In this respect, consider the step taken by Lincoln car makers in putting the gas spout in the center rear of the car so that the spout can be reached from either side. Hats off to Lincoln! We owe it to the station operator to try to make his job as easy for him as it is for a driver to operate his car. Just look at the amount of time and research and money spent trying to make the driver more comfortable.

Twe been referring to grease operations solely as they apply to automobiles. That's because it's simpler. Actually the same simplification and convenience is needed, and can be procured, for other industrial application . . . that is, in the field of lubrication of trucks, buses, airplanes, motorcycles, even ships.

Of course, even in our drive for simplification, we realize that controlled operating temperatures and conditions (steady power output) sometimes call for the use of special lubricating greases for best, lowest cost lubrication. In some fields of transportation, such as airplanes, there are tremendous variables in temperature to overcome, requiring special care, tools, and lubricants. For example, a plane at the Panama Canal will run into such circumstances as operating in 130-degree temperatures on the ground, and then in a "scramble" soaring in a few minutes to 50,000 feet where the temperature is 60 below zero.

Since I'm not a technician, please spare me the technical questions, but I have some strong support in my pleas for simplification and customer convenience. You all know Ray Shaw and the Chek-Chart Corporation which he heads. Ray and Chek-Chart have thrived for years in a business that calls for translating the intricacies of lubrication into layman language. And now even Ray is plugging for simplification and convenience. To me that's proof we need a change. Now if you like confusion, let me quote from Ray's list of lubricant requirements recommended by truck, bus, and coach manufacturers for lubricating transmission and differential gears:

Straight mineral gear lubricant—4 different grades. Extreme pressure gear lubricant—3 different grades.

Hypoid gear lubricant—3 grades. All-purpose gear lubricant—2 grades. Multi-purpose gear lubricant—3 grades.

And one grade for Special converter fluid, G.M. Hydra-matic fluid, and G.M. Hydraulic drive fluid.

Other lubricant requirements of truck, bus, and coach manufacturers include adapter grease, air compressor oil, air filter fluid, ball bearing lubrication, ball and roller bearing grease, castor oil, chassis lubricant, control cable lubricant, cup grease . . I'm just down to the C's. There are 28 of them. We'd need a warehouse for every service station or garage and a grease expert to administer them. In short, there are 39 different types in 40 different grades of lubricants required for truck, bus, and coach lubrication. That is, if we observe the manufacturer's recommendations. Furthermore, the list that tells when these various parts of truck, bus, and coach should be lubricated, according to the vehicle's mileage, makes a Pennsylvania Railroad timetable booklet read like Guffey's first reader.

### Conclusion

In conclusion, let's remember the customer. He's been warming the bench all during the war years, but now he's back in his traditional spot as the All-American quarterback . . . and he's calling the plays. We're still on his team—very much so—but we'd better follow his signals . . . or we'll all be benched.



### with CYANAMID GELLING AGENTS

Tests by ASTM Penetrometer and SOD Viscosimeter at Cyanamid's Stamford Laboratories prove conclusively that CYANAMID Gelling Agents for aluminum greases give better yield, higher gel stability and greater resistance to mechanical breakdown.

Source of this three-way improvement: a unique CYANAMID process which replaces a small

### Available in Three Grades

**Cyanamid Aluminum Stearate G-100**—Gives maximum gelling...developed for continuous grease-making equipment.

Cyanamid Aluminum Stearate G-200—Higher gelling properties in hydrocarbon oils than a conventional distearate...gives smooth gel of moderate consistency.

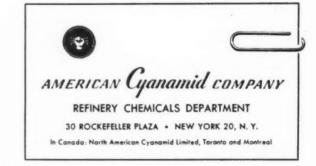
Cyanamid Aluminum Stearate G-300—Gives high yield and excellent stability in a variety of oils...for use in conventional grease-making equipment.

Write for booklet:

CYANAMID ALUMINUM STEARATES FOR LUBRICATING GREASES

amount of the stearic acid with dimer acid (dimerized linoleic acid), giving CYANAMID Gelling Agents a gel stability far greater than that of aluminum stearate itself.

Test CYANAMID Gelling Agents under your own plant conditions. Discover for yourself how they offer a new and economical means to finer aluminum greases.



# AT WRIGHT AERONAUTICAL\* just one grease SHELL ALVANIA GREASE

lubricates



3,200 MACHINE TOOLS
25,600 ELECTRIC MOTORS
and reduces grease
requirements 15%

\*Engine Division of Curtiss-Wright Corporation

Along with progressive companies in every industry, the Engine division of Curtiss-Wright has found that a single lubricant, Shell Alvania Grease, provides superior protection to many different kinds of machines . . . from sump pumps to compressors to forging presses. They discovered at the same time the considerable economy of greatly reduced grease inventory . . . just the *one* grease for hundreds of machines.

In plant after plant, Shell Alvania Grease provides superior lubrication for every grease-lubricated machine in the place!

### Look at these advantages:

- Shell Alvania Grease flows freely in cold temperatures, yet will not run out of bearings under excessive heat.
- 2. Ideal for wet, humid applications . . . it resists water emulsification.
- 3. Shell Alvania Grease has extremely high oxidation stability.
- 4. You'll find that Shell Alvania Grease extends time between greasings . . . a substantial saving in labor and grease.
- 5. Simple inventory . . . just the one grease to stock and apply.

Shell Alvania Grease may well be the answer in your plant. Write for technical information on Shell Alvania Grease, to Industrial Lubricants, Shell Oil Company, 50 West 50th Street, New York 20 New York—or 100 Bush Street, San Francisco 6, California.

SHELL ALVANIA GREASE

The True Multi-Purpose Industrial Grease



# 21st NLGI



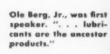
No annual meeting complete without it—Monday morning registration.



Monday morning session with Vice-President G. A. Olsen presiding. Left is Ole Berg, Jr., sitting together at right—President W. W. Albright and Director H. P. Hobart.



Address of welcome by President W. W. Albright.







Monday noon directors meeting with Directors M. R. Bower, H. P. Hobart, W. H. Saunders, Jr., and R. Cubicciotti talking things over after their meeting.

# Annual Meeting Is Largest - 529 Attend

Here is a picture story of it's highlights as they occurred



Part of the crowd who heard the Monday morning session.



H. P. Hobart pays tribute (see page 31).



Presiding at the afternoon session, H. L. Hemmingway.



E. R. Booser . . . "whether giant turbine generators or fractional horsepower motors."



Monday afternoon speaker, J. C. Kirk, . . . "increasing e mphas is being placed on specialized lubricants which will previde adequate protection under very severe and extreme operating conditions."



### 10 BUSHELS or 10 THOUSA

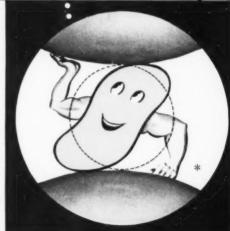
TRACTOR-CORNPICKER TEAM GIVES GREATER NET YIELD WITH SCIENTIFICALLY CORRECT LUBRICATION

This tractor-cornpicker combination, if well adjusted and correctly lubricated, should pick up at least 95 per cent of the gross corn yield. Battenfeld greases, compounded scientifically for specific job requirements, help make possible America's giant productive capacity.

Grease is no longer just "grease". Lubricating greases are compounded products of many types, each with a prime purpose in view. Lubricating greases by Battenfeld are literally millions of units in protective action! . . . highly complex units whose molecular structure varies widely according to the job each type of "grease" must do.

Battenfeld is research and production headquarters for lubricating greases sold under the trade names of the nation's most famous marketers and jobbers.

Your inquiry is cordially invited.



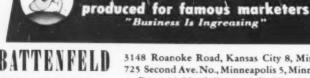
"Never shall the surfaces meet!"... even though pressures reach 90,000 lbs. and tolerances are as close as 1/10,000 of an inch.



Molecular structure varies widely between scientifically compounded Battenfeld greases - according to the condition under which bearing surfaces must be lubricated.



\* TRADEMARK



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international headquarters for

LUBRICATING GREASES

Business Is Ingreasing"



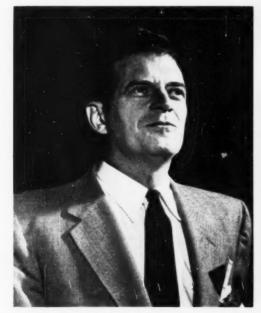


After the annual business meeting G. E. Merkle (left) and R. Cubicciotti talk things over.

### Tuesday



G. A. Olsen presides at the Tuesday morning session.



Deep Rock's president, W. H. Garbade, told them "progress is inevitable" in a fascinating address giving everyone a dramatic insight of future demands. You can read what he said on page 8.



Then a board meeting with the election of H. L. Hemmingway (left) as vicepresident, G. A. Olsen (center), president and A. J. Daniel (right), treasurer.



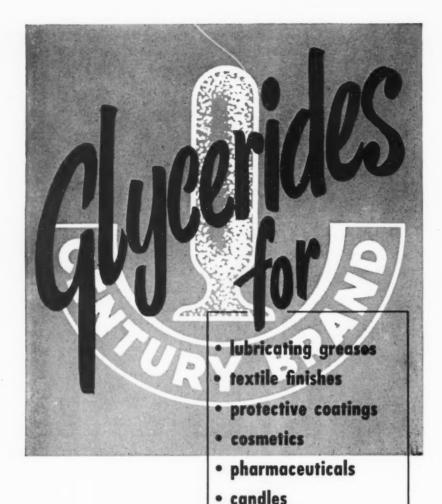
Melville Ehrlich . . . "what if the grease already present and the one being added are not compatible?"



E. O. Forster . . . "15 to 17 million wheel bearing grease jobs . . . "



Discussing the marketing picture presented by W. H. Garbade are: G. H. Link (left) and Harold A. Woods, who had just heard a unique marketing presentation.



### CENWAX G (hydrogenated castor oil)

CENWAX G is a glyceride chemically, although physically it resembles a wax. It is a hard, high melting point solid, available in finely beaded form, with practically no taste or odor. Typical applications are in lithium, barium or sodium greases; hot-melt paper coatings; extender for higher priced waxes in polishes. These CENWAX G specifications should suggest other uses:

F.F.A. (as Oleic Acid)	 2.0 max	
Acid Number	 4.0	
Saponification Number		1
Iodine Value (WIJS)	 1-5	
Melting Point (°C)		
Hydroxyl Value	 155-165	,
Acetyl Value		

### CENTURY HYDREX 360 (hydrogenated tallow glyceride)

· leather dressings, etc.

This hardened tallow product is available in beads and its good color, high titre and low iodine value particularly suit it for use in certain textile finishes and lubricating greases.

### SPECIFICATIONS

Titre	. (136.4-140.0°F) 58-60.0°C
Iodine Value (WIJS)	1-3
Free Fatty Acid	
Acid Number	2-6
Saponification Value	190-195
Color 51/4" Lovibond Colum	mn(Max.)15 Yellow-2 Red

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IN CANADA: W. C. HARDESTY CO. OF CANADA LTD., TORONTO



Between papers Anglo-Iranian's R. G. Brown and Hal U. Fisher of California Texas Oil discuss interesting points that had been made.





It's Monday evening and again Chek-Chart presents carnations to the men and gardenias to the women just before the banquet.



On their way to the banquet are: Mrs. A. J. Daniel, President-Elect G. A. Olsen and Mrs. Olsen. All three later sat at speakers table.



Another group pauses before entering the banquet room, from left to right are: Mrs. M. R. Bower, NLGI Director M. R. Bower and Mrs. C. B. Karns.



And here is a strictly stag group getting ready to enter the banquet room with G. W. Trainor (center) and Verne E. Johanson (right) enjoying the whole proceeding with C. A. Stratton



The Monday evening The Monday evening banquet is opened by the immediate past president, W. W. Albright, who welcomed 373 guests to the largest of all NLGI banquets.

. . . and Master Lubricant's M. M. Patterson and E. M. Higgins get in a few remarks about a rather lively

program.



Waiting for the after-banquet events to start are: G. A. Olsen (elected NLGI President that afternoon), Mrs. Olsen and W. H. Garbade.



NLGI's highest award presented by W. W. Albright to Bruce Farrington in the form of a silver tray.



After award presentation they relax and seem to enjoy being out of limelight for a while.

Accepting the award Mr. Farrington gave full credit for his achievements to co-workers and company. You can



Previous president, G. E. Merkle (left), presents president's key to W. W. Albright who had just finished his term of office as president that afternoon.



Part of the record breaking crowd attending the banquet turns toward the speaker, W. W. Albright, as he opens the evening's program.



Mr. and Mrs. W. W. Albright contemplate a splendid banquet and well-presented events following it.

# Black or Light



# **METASAP\* ALUMINUM STEARATES**make specialty greases 6 WAYS BETTER

Whether you're making black oil greases or clear lubricants, you'll find the use of Metasap Aluminum Stearates will solve your manufacturing problems, cut costs, give you a better finished product. Check these Metasap grease bases for economical production of lubricants with any desired body:

- METASAP 598—high gel type for use where high yields are of paramount importance.
- METASAP 537 produces a high gel for clear, transparent greases with good lubricating stability.
- METASAP GM gives a medium heavy gel where smoothness is of prime importance.
- METAVIS 540—can be used with wide range of mineral oils; produces semifluid, adhesive-type lubricant known as castor machine oil; highly economical.

- 1. more stable at high temperatures
- 2. more water-repellent
- 3. more resistant to centrifugal action
- 4. smoother in texture
- 5. wider in applicability
- 6. more economical

Samples are available for experimental work. Our research and technical staff will be glad to help you select the correct base for any given oil, or achieve any desired effect in a finished grease through use of proper soap mixtures.

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### Wednesday

# **Technical Committee Meeting**

Reports of Subcommittees

Symposium on Dispensing Lubricating Greases in Service Stations and Garages



Wednesday and the start of the Technical Committee session. Chairman T. G. Roehner (left) presiding, E. S. Carmichael took excellent notes of all reports given by subcommittee chairmen.



Start of the Technical Committee Symposium "On Dispensing Lubricating Greases in Service Stations and Garages." Presiding is Symposium Chairman, J. F. Carter. Sitting at table left to right are: John J. Gleeson, A. R. Boyer, J. Reinsma, J. M. Stokely, N. Marusov.



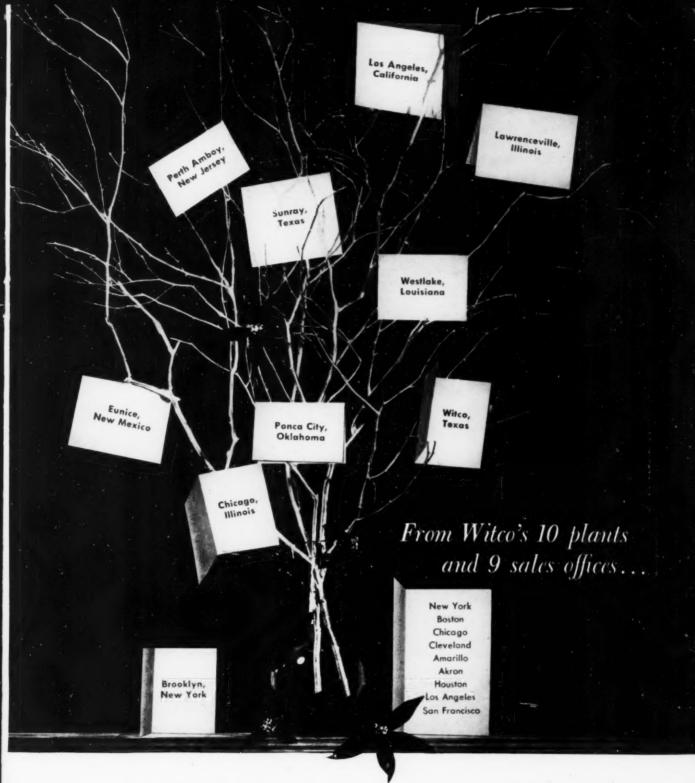
J. J. Gleeson, Plymouth Division, Chrysler Corporation, gave automobile manufacturers point of view. Said their job is—"sell and keep them sold."



A. R. Boyer, Shell Oil Company, brought service station operators' and garage owners' viewpoint directly to audience clad in service man's coat.



Here is the dispensing equipment manufacturers' standpoint on the subject being presented by J. Reinsma, Stewart-Warner Corp.



season's greetings and best wishes for the new year.

Witco Chemical Company 260 Madison Avenue, New York 16, N. Y.





"... lubricant producers and equipment manufacturers had neither a common language... nor a satisfactory means of communicating..." said Gulf's N. Marusov discussing the method of selecting dispensing equipment and lubricating greases.



"... characteristics that significantly affect dispensing can be divided into two broad groups." California Research's J. M. Stokely presenting the side of the lubricating grease manufacturer.



(Above) To him goes full credit for both planning and presiding. Aro Equipment's J. F. Carter completes symposium by summarizing points made by the four panel members.

Would it be the biggest meeting ever? Would everyone get something worth attending out of it? It was and they did. NLGI's Executive Secretary Harry F. Bennetts smiles broadly for the first time in three days and tells Mrs. Bennetts, "Let's go home."



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### Continental Can Company, Inc.

629 First National Bank Building Omaha, Nebraska Representative—T. A. Graham

### Geuder, Paeschke & Frey Company

324 North Fifteenth Street Milwaukee 1, Wisconsin Representative—Neil Savee

### **Inland Steel Container Company**

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### Jones & Laughlin Steel Corporation

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### National Steel Container Corp.

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### The Ohio Corrugating Company

917 Roanoke Ave. S. E. Warren, Ohio Representative—Lawrence F. McKay

### **Rheem Manufacturing Company**

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### **Rieke Metal Products Corporation**

Auburn, Indiana Representative—Ralph S. Pearson

### Trilla Cooperage, Inc.

2524 Blue Island Avenue Chicago 8, Illinois Representative Lester Trilla

### **United States Steel Products**

Division, United States Steel Company 30 Rockefeller Plaza New York 20, New York Representative—Wm. I. Hanrahan

### Vulcan Stamping & Mfg. Co.

P. O. Box 367
Bellwood, Illinois
Representative—H. B. Scharbach

### MANUFACTURERS OF EQUIPMENT FOR APPLICATION OF LUBRI-

CATING GREASES

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Bryan, Ohio Representative—R. W. Morrison

### Balcrank, Inc.

Disney near Marburg Cincinnati 9, Ohio Representative—Richard P. Field

### Gray Company, Inc.

60 Northeast 11th Avenue Minneapolis 13, Minnesota Representative—B. A. Beaver

### **Lincoln Engineering Company**

5701 Natural Bridge Avenue St. Louis 20, Missouri Representative—G. A. Hubbard

### **Stewart-Warner Corporation**

Alemite Division 1826 Diversey Parkway Chicago 14, Illinois Representative—D. C. Peterson

### United States Air Compressor Co.

5300 Harvard Avenue Cleveland 5, Ohio Representative—C. A. Bening

### MARKETING ORGANIZATIONS

### California Texas Oil Company, Ltd.

551 Fifth Avenue New York 17, New York Representative—Hal U. Fisher

### **Canadian Petrofina Limited**

1015 Beaver Hall Hill Montreal, Quebec, Canada Representative—M. E. Wight

### REFINERS

### Farmers Union Central Exch., Inc.

P. O. Box G St. Paul 1, Minnesota Representative—H. F. Wagner

### Mid-Continent Petroleum Corp.

Mid-Continent Building
P. O. Box 381
Tulsa, Oklahoma
Representative—J. W. Basore

### **Valvoline Oil Company**

Division of Ashland Oil and Refining Co. Box G Freedom, Pennsylvania Representative—D. A. Smith

### SUPPLIERS OF EQUIPMENT FOR MANUFACTURING LUBRICATING

GREASES

### **Blaw-Knox Company**

Butlovak Equipment Division 1543 Fillmore Avenue Butfalo 11, New York Representative—Edward V. Hegg

### Chemicolloid Laboratories, Inc.

30 Church Street New York 7, New York Representative—David F. O'Keefe

### **The Girdler Company**

A Division of National Cylinder Gas Co. Box 987 Louisville 1, Kentucky Representative— J. E. Slaughter, Jr.

### Morehouse Industries

707 Henry Grady Building Atlanta 3, Georgia Representative—George E. Missbach

### The C. W. Nofsinger Company

906 Grand Avenue Kansas City 6, Missouri Representative—C. W. Notsinger

### **Stratford Engineering Corporation**

1414 Dierks Building Kansas City 6, Missouri Representative—J. W. Sylvester

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ING GREASES

### **American Cyanamid Company**

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### **Archer-Daniels-Midland Company**

Chemical Products Division 2191 West 110th Street Cleveland 2, Ohio Representative—Frank C. Haas

### **Armour & Co., Chemical Division**

1355 West 31st St. Chicago 9, Illinois Representative—H. F. Whitler

### Attapulgus Minerals & Chemicals Corporation

210 West Washington Square Philadelphia 5, Pennsylvania Representative—R. H. Hubbell, Jr.

### The Baker Castor Oil Company

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### **Darling & Company**

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### E. I. du Pont de Nemours & Co.

Wilmington, Delaware Representative—John R. Sabina

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### Leffingwell Chemical Company

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### N. I. Malmstrom & Company

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### Marcus Ruth Jerome Company

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### Synthetic Products Company

1636 Wayside Road Cleveland 12, Ohio Representative-Garry B. Curtiss

### Swift & Company

165th & Indianapolis Boulevard Hammond, Indiana Representative-F. H. Beneker

### Vegetable Oil Products Co., Inc.

Vopcolene Division 5568 East 61st Street Los Angeles 22, California Representative—C. F. Williams

### **Warwick Chemical Company**

Division Sun Chemical Corporation 10-10 44th Avenue Long Island City 1, New York Representative—Dr. J. J. Whitfield

### Witco Chemical Company

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### Midwest Research Institute

4049 Pennsylvania Kansas City 2, Missouri Representative-Dr. M. H. Thornton

### Petroleum Educational Institute

9020 Melrose Avenue Los Angeles 46, California Representative G. A. Zamboni

### Phoenix Chemical Laboratory, Inc.

3953 W. Shakespeare Avenue Chicago 47, Illinois Representative Mrs. G. A. Krawetz

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# Bruce Farrington Receives NLGI'S Highest Award

In Form of Silver Tray Inscribed

"Awarded to Bruce Farrington for Distinguished Achievement in Lubricating Grease Technology—National Lubricating Grease Institute— October, 1953"

### **Acceptance Speech**

May I express my deep appreciation for the signal honor which your Institute, through your president, has bestowed upon me tonight. In accepting this award, I do so in trust and the name of the co-workers who have worked with me in the lubricating grease field.

No one realizes more than I that in this day and age the fruits of accomplishment seldom fall to any one individual; and without the wholehearted cooperation and faith of my company, little of value would have been achieved.

I am indeed fortunate in having had the privilege of being associated with this Institute almost from its inception, and in the long and lasting friendships which have resulted. These have been the chief reward. I believe that it was at a meeting of the American Chemical Society in Cincinnati that Dr. Me-Kee talked to me about the need for a technical society in the field of lubricating grease. It was then that we agreed that a microscopic examination of grease might shed new light on grease structure and performance. Dr. McKee's enthusiasm and encouragement were of great help in our early work on grease structure.

The Institute has always been generous and unprejudiced in accepting new ideas and new methods even when controversial. For many years the National Lubricating Grease Institute was the only outlet for presenting technical information in the lubricating grease field. Today it renains the most important. The technical papers being presented at this, the 21st Annual Meeting, attest to that.

Again, may I thank your president, the board of directors, and the award committee for this generous remembrance.

### **Biography**

Bruce B. Farrington is administrative assistant to the manager of petroleum products research at the Richmond Laboratories of California Research Corporation, research subsidiary of the Standard Oil Company of California.

Holder of more than 50 patents as a result of his work in various lines of petroleum research, he has been very active in the development of motor oil additives and detergent Diesel oils.

In recent years, his electron microscope studies into the real structure of lubricating greases have been considered particularly noteworthy. The investigations were summed up in the paper, "Fine Structure of Lubricating Greases," which he presented to the New York Academy of Sciences in 1051

Earlier in his career, Mr. Farrington also carried on studies in kerosene refining and participated in the development of a number of petroleum specialties such as wood preservatives, polishes and waxes, and metal treating processes for bearings and motor parts.

Mr. Farrington has been an active member of various professional societies and has been a frequent contributor of technical papers to their meetings. His memberships include the American Chemical Society, the Society of Automotive Engineers, American Society for Testing Materials, American Society of Lubricating Engineers and the National Lubricating Grease Institute.

Born in Alameda, California, in 1897, Mr. Farrington received his early education in the public schools



Bruce B. Farrington

of that community and graduated from the University of California in 1920, with a B.S. degree in chemistry. He served during World War I as a Navy radio officer.

In 1921 he joined Standard as a research chemist in the company's research and development department, which some 20 years later evolved into the present California Research organization.

Rising steadily through positions of increasing responsibility, he was supervising research work within a few years and by 1941 was supervisor of both grease and compounded lubricants laboratories. He was named supervisor of the Greases and Industrial Lubricants Division of the Richmond laboratories in 1946 and appointed to his present position in 1950.

During 1951 he also held down a special assignment as California Research's Eastern representative with headquarters in Washington, D. C.

Mr. Farrington is married, has a son in the United States Army and a daughter and granddaughter. He resides at 784 Santa Barbara Road, Berkeley, Calif.

An accomplished pianist, Mr. Farrington's principal hobby is music, with gardening running a close second. He has also done some stamp collecting.



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# Past President J. R. Corbett

delivered at the 21st annual meeting by H. P. Hobart

Mr. Albright, Mr. Berg, Mr. Olsen, Members, Guests and Friends of the National Lubricating Grease Institute, your directors have asked me to present to you at this meeting a tribute to the memory of our beloved former director, associate and friend, James Ralph Corbett, to record his long and important activity in the lubricating grease industry and his close association with this Institute for a period of more than 20 years.

Mr. Corbett passed away earlier this year on July 24th at his home in Oklahoma City.

Mr. Corbett will long be remembered by his many friends in the petroleum industry and especially by his associates in NLGI and those in his own company, as a devoted humanitarian, for his outstanding interest in helping others and for his kindness, his integrity, his high ideals and his love for his family and his friends

He was one of those fine characters who was always willing to go out of his way to help his fellow man and to share with him his knowledge and understanding.

Mr. Corbett was born at Cincinnati, Ohio, on October 5, 1889. He found it necessary to go to work when only nine years old in order to assist his widowed mother and family. His formal schooling ended at the fifth grade and it was not until years later, after he was married, that he went on to complete his education through night courses at high school and coilege. He was graduated from Ohio Mechanical Institute in 1918 with the degree of Chemistry.

Mr. Corbett entered the oil business at the age of 14, when he joined the Moore Oil Company at Cincinnati, Ohio, now a unit of The Pure Oil Company. He was quick to learn, progressed rapidly and became an eager student of the subject of lubri-

cating oils and greases. Before reaching his 20th birthday, he had accumulated a number of years of service with the Moore Oil Company and had gained for himself a position of responsibility with supervision over quite a number of the company's employees.

While working during the day for the Moore Oil Company and going to school at night, he set up a small chemical laboratory in the attic of his home and learned more about oils and greases by first-hand experiment. It was during his 12 years at the Moore Oil Company that he acquired his college degree in chemistry.

Receiving an offer of a position in a refinery at Cushing, Okla., he moved his family from Cincinnati and spent the next three years broadening his knowledge in various phases of the lubricating grease business, including that of production manager.

His next move was to Sapulpa as a refinery utility man. Shortly after starting his work at Sapulpa, he had the opportunity of assisting H. L. Cato, who was operating a business in Oklahoma City. Mr. Corbett had learned early in life from one of his college professors that one should never be afraid to share ideas which one had acquired. Mr. Cato not only admired this quality, but greatly appreciated the generous assistance that had been given him by Mr. Corbett and a few years later approached Jim Corbett with the suggestion that along with Claude C. Huffman, they form the Cato Oil & Grease Company to be located at Oklahoma City, where they would be near adequate supplies of high grade raw materials and be in position to serve the ever expanding Midwestern market for lubricating oils and greases.

The original plant covered only two city lots and manufactured cup grease in one small grease kettle. The history of the company has been one of steady and continuous progress over the past 31 years. Today the Cato Oil & Grease Company occupies 11 acres and has manufacturing facilities for 150,000 pounds of grease and compounding facilities for 50,000 gallons of oil per day.

Mr. Corbett served as vice-president in charge of plant production and his long experience in manufacturing quality products was a dominant factor in the splendid progress which his company has made.

When H. L. Cato passed away in 1948, the active management of the business was shared by the two surviving partners, Mr. Corbett and Mr. Huffman, at which time Mr. Corbett became president of the company and he continued to serve as president until the time of his passing.

In reviewing the particular qualities which were responsible for Mr. Corbett's outstanding success, perhaps the most important were his constant desire to keep abreast of the times and his ability to develop new techniques, new methods of production, new types of lubricants and new markets. Mr. Corbett was never afraid of a challenge. To him a challenge offered visions of achievement, a goal to be reached and he seemed to work best under pressure. He steadfastly refused to feel that a thing truly worthwhile "could not be done" and firmly believed that there must be some good way to accomplish a desired goal. He always endeavored to instill these ideas in the numerous young people whom he assisted with their education, a great many of whom were helped through college, both financially and inspirationally through their association with Mr. Corbett.

In 1911, Jim Corbett married Jessie Mae Simmonds who survives him with their three daughters, Mrs. Hamilton, Mrs. Moore and Mrs. Wixson and eight grandchildren—Sheri, Pam, and Eddie Hamilton, Debbie, Ann, and Bobbie Moore, and Howie and Jimmy Wixson.

Mr. Corbett was elected vice-president of the National Lubricating Grease Institute in 1946 and president in 1947. He has served for about 15 years as a director. He also served as a director of the Pennsylvania Grade Crude Oil Association. He was a member of the Society of Automotive En-

Continued on page 40







Whether it's greasing junior's racer, or a mighty locomotive, DEEP ROCK has greases and lubricants that fill the bill. Let DEEP ROCK's ultra-modern refining facilities supply you today!

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Tulsa. Oklahama

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Harshaw Lead Base, as an additive to petroleum lubricants, improves extreme pressure characteristics and imparts the following desirable properties:

Increased film strength

Increased lubricity

Improved wetting of metal surfaces

A strong bond between lubricant and metal surfaces

Resistance to welding of metals at high temperatures

Moisture resistance and inhibits corrosion

Harshaw Lead Bases are offered in three concentrations to suit your particular needs:

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Other metallic soaps made to your specifications. Our Technical Staffs are available to help you adapt these products to your specific needs.

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1954

# **NLGI Annual Meeting**

October 25-27

Mark Hopkins Hotel, San Francisco, California

1954

# Technical Committee

Chairman T. G. Roehner, Director of the Technical Service Department, Socony-Vacuum Laboratories

The Symposium on Dispensing Lubricating Greases in Service Stations and Garages, held during the meeting of the Technical Committee on October 28, was a success in respect to the amount of interest created. However, it ran into the same difficulty experienced by previous symposiums. There was insufficient time to take care of the questions from the floor. The program committee is considering advancing the symposium part of the meeting to the first or second day and assigning an entire afternoon to it. As a replacement during the Technical Committee Meeting, to supplement the subcommittee reports, it has been suggested that an "information please" type of panel be organized on a subject of primary interest to technical personnel. A questionnaire regarding this proposal will be distributed to the Technical Committee. The questionnaire will include space for suggested subjects.

Because all questions from the floor could not be answered during the two hours assigned to the symposium, the members were urged to send their questions, in written form, to Harry Bennetts, by November 30th. He will arrange to have them answered with the assistance of

J. F. Carter of The Aro Equipment Corporation, chairman of the symposium subcommittee. The replies will be included in a booklet to be published soon thereafter, which will cover all papers presented at the symposium and the questions answered during the session. The editor of the booklet is N. Marusov, of Gulf Research & Development Company.

The meeting was practically unanimous in stating that the symposium subcommittee did an outstanding job. Its membership was:

- J. F. Carter, chairman-Aro Equipment Corporation
- J. W. Basore-Mid-Continent Petroleum Corp.
- L. C. Brunstrum-Standard Oil Company (Indiana)
- T. E. DeVilliers-Cities Service Oil Company
- G. H. Link-Shell Oil Company
- G. E. Merkle-Fiske Bros. Refining Company
- L. Miller-Aro Equipment Corporation
- C. F. Raisch-Stewart-Warner Corporation
- L. C. Rotter-Lincoln Engineering Company
- C. E. Watson-California Research Corporation



Inside and Outside

of British American Oil Company's New grease plant at Clarkson, Ontario.

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And Santopoid 33 offers an important extra—its foam-inhibitor content. Santopoid 33 contains a stable anti-foam agent that retains effectiveness over long periods of storage. Enough stable anti-foamant is present in Santopoid 33 so that the final gearlubricant blend is permanently protected against foaming in service.

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# Patents and Developments

### **Greases Gelled With Inorganic Colloids**

Among the patents issued to Shell Development Company on the improvement of inorganic colloid-gelled greases with respect to water resistance is U. S. Patent 2,648,633.

This patent points out that the principal advantage of such greases, over those gelled with metal soaps, is the lack of any phase change during heating of the grease. Their limiting factor is essentially the temperature at which the lubricating base volatilizes or decomposes.

Static corrosion of such greases is claimed to be controlled by the addition of a water-soluble inorganic nitrite and a cationic hydrophobic surface active agent.

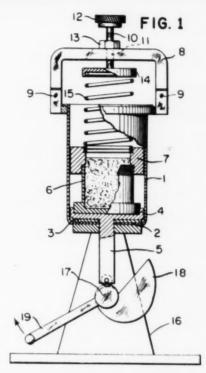
A	preferred composition contains the following	g:
	Mineral lubricating oil	88
	Silica	8
	Magnesium silicate	0.5
	Partial fatty acid amide of epichlorohy-	
	drin ammonia condensation product	3.2
	Sodium nitrite	

### **Lithium Hydroxy Stearate Greases**

The production of lithium hydroxy fatty acid soap greases of improved yield having minimum bleeding characteristics is described in the Shell Development Company patent 2,651,616. The preparation of such greases generally proceeds in three stages. First the lubricating oil and soap are heated at elevated temperature to form a homogeneous solution. The resulting composition then is cooled to cause gelation, and the gel product finally is homogenized to impart a suitable grease structure. When prepared in this manner, such greases are claimed to show evidence of bleeding or poor yield.

According to the patent, a lubricating grease is prepared by heating the oleaginous vehicle with at least 35° of the lithium soap until a homogeneous composition is formed. Then the mixture is cooled to a temperature between about 110°-170°C, and then isothermally gelled in this temperature range, followed by cooling and homogenizing. The properties of the grease are said to be determined by the temperature range within which the composition is isothermally gelled. To insure that the whole composition is in its desired condition when isothermally gelled, it is desirable that the rate of cooling to the equilibrium temperature (isothermal gelling temperature) be sufficiently slow to enable the grease to complete any changes occuring therein at higher temperatures. But oxidation should be minimized, so a rate of cooling of about 1.5°-2.5°C. per minute is preferable.

After gelling, the rate of cooling is preferably rapid in



order to fix the particular soap structure created at equilibrium temperature, say at about 5°-15°C. per minute.

### **Grease Compacter**

An appartus claimed to be particularly useful in preparation of lubricating grease samples according to the cone penetration method A.S.T.M. D-217-48 is shown in Figure 1. It is described in greater detail in U. S. Patent 2,649,165 issued to Sinclair Research Laboratories.

### News Items

W. C. Hardesty Co. is advertising its Cen Wax G (hydroginated castor oil) and its Century Hydrex 360 (hydrogenated tallow glyceride as being available in bead form (Chemical Week 8/8/53 p. 36).

Evans Chemetics is offering iso-octyl thioglycolate as an additive in lubricating compositions (Chem. & Engrg. News 8/10/53 p. 3247).

Jefferson Chemical Co. is advertising commercial availability of nonyl phenol (Oil, Paint & Drug Rep. 8/3/53 p. 18).

Preparation of aluminum tri-soaps (tri-palmitate and tri-stearate)—Mehrotra (Nature 7/11/53 p. 74).

### **NLGI Annual Meeting**

It's in San Francisco in '54

**NLGI Annual Meeting** 



### **Canadian Petrofina Limited Joins**

# N L G I Company Representative, Technical Committee Member

M. E. Wight is both company representative and technical committee

member for Canadian Petrofina Limited. He is a native of Montreal, born December 22, 1911. In 1933, he graduated from McGill University with a B.Sc. degree.



M. E. Wight

Mr. Wight joined British American Oil

Company in 1935, working in the control laboratories at its Toronto and later its Montreal refineries until 1937. At that time he started with McColl-Frontenac Oil Company Ltd., at Montreal. There he remained for 16 years in the following positions: 1937-39, process chemist, Montreal refinery; 1939-40, chief chemist, lubricating oil blending plant, Montreal; 1940-44, chief chemist, Montreal refinery; 1944-49, superintendent, technical service division, executive offices; 1949-53, assistant to manager, industrial sales, executive offices.

August 1, 1953, shortly after Canadian Petrofina Limited was organized, Mr. Wight became associated with it. Besides directing its industrial sales activities, he is responsible for technical service activities and for product purchases, pending the start of production in its own refinery and lubricating oil blending plant.

Canadian Petrofina Limited was inada on May 1, 1953, to engage in the refining, processing and marketing of petroleum and petroleum products. The company may also engage in other activities connected directly or indirectly with the petroleum industry, in Canada and elsewhere. The address of the company's head office is Beaver Building, 1015 Beaver Hall Hill, Montreal, Canada.

The decision to enter the Canadian market was made only after an extensive study, by experts of the Petrofina organization, had indicated that such growth factors as increasing population, motor vehicle registrations, road construction, industrialization and rising standards of living, should result in a continued increase in the consumption of petroleum products in Canada. It was considered that this growth potential combined with the experience and success of the Petrofina organization in entering competitive markets in other countries, should enable the company to establish profitable operations in eastern Canada and provide attractive possibilities for steady growth.

Canada, with its incentive to free enterprise, with its sound economy and finances, with its great political stability, is considered in Europe as the safest and most promising country for long term investments.

The activities of the company will not be limited to refining and marketing its products in Canada alone. It is expected that operations will be extended to all phases of the oil industry in the Western Hemisphere. The company's affiliation with Petrofina will materially assist in the carrying out and financing of future expansion.

The company is already in the process of establishing a comprehensive marketing organization for gasoline and a wide range of other petroleum products in eastern Canada. Through its own and other outlets, the company anticipates that its distribution system will be well established by the latter part of 1955, when the proposed refinery is expected to be brought into operation. Terminal storage facilities have been rented in Montreal in order that the bulk handling of products can commence without delay. It is intended that the company's prodnets will be marketed under the trade name "Fina," and that its retail outlets will display the distinctive insignia of the Petrofina group, which has become widely and favorably known in all countries where products of the Petrofina organization are sold.

To provide an ample supply of refined petroleum products, the company will build and operate a modern refinery, including a primary distillation plant, a vacuum distillation plant, a catalytic cracking plant, a catalytic reforming plant, complete with auxiliary and related facilities, capable of producing the highest quality products. The new refinery will be located in the Montreal area on land owned by the Company and will have an initial intake capacity of approximately 20,000 barrels of crude oil per day.

The estimated cost of the proposed refinery is \$20,000,000. A contract will be made with a first-class U. S. specialized firm to engineer and supervise its construction. It is expected that the refinery will be completed and in operation by the latter part of 1955.

Compagnie Financiere Belge des Petroles "Petrofina," Societe Anon-

vme, was formed in 1920 to take over three oil producing companies in Roumania. Petrofina is now, directly and through a number of subsidiary and affiliated companies, a large integrated enterprise in the petroleum industry. Exploration and producing subsidiaries are located in Canada, Mexico and Angola, and refining and marketing and or other operations are carried on in the following countries: Belgium, Luxembourg, Belgian Congo, Great Britain, France, Tunisia, French Equatorial Africa, Holland, Switzerland, Portugal, Portuguese Angola and Greece.

Long term contracts for the supply of crude oil and finished products have been entered into, which are deemed to be adequate to supply the organization's requirements. A refinery at Antwerp (in which Petrofina and Anglo-Iranian Oil Company each has a 50 per cent interest) is now being enlarged from 40,000 barrels a day capacity to 60,000 barrels a day. The tanker fleet, including wholly-owned ships, long term time-charters, two fast super-tankers of 30,000 tons each now or order and one tanker of 13,500 tons now on order, comprises 24 vessels, having a total dead-weight of 380,000 tons and 3,250,000 barrels carrying capacity. Petrofina, through a subsidiary, operates in Belgian Congo two pipelines for finished products with an aggregate capacity of over 10,000 barrels a day.

Total sales of the Petrofina organization exceed 50,000 barrels per day and are increasing despite intense competition in many areas. Extensive research laboratories, to serve the growing needs of Petrofina and its subsidiary and affiliated companies, are in the course of construction. Numerous minority interests have been acquired in companies operating related businesses in various countries. The number of regular employees of the Petrofina group, exceeds 7000 and its personnel relations are excellent.

The experience and facilities of Petrofina are fully available to subsidiary and affiliated companies of the group, which not only results in economies of operating and overhead costs but also strengthens the position of each company, inasmuch as each can rely on the group's resources of and access

to supplies of crude oil, products and shipping facilities.

During the three years ended December 31, 1952, total net assets of Petrofina increased by 118 per cent, and annual net profit increased by 536 per cent. Since Petrofina does not publish consolidated financial statements, Petrofina's interests in subsidiary and affiliated companies are carried on its balance sheet as "Investments" and earnings of subsidiary and affiliated companies are reflected in the profit and loss account only to the extent of dividends received from such companies. The total assets of the Petrofina organization, less depreciation, as at December 31, 1952, amounted to approximately \$115,000,000 with depreciated replacement value being appreciably higher.

The long experience of the parent company will be at the disposal of Canadian Petrofina. The supplies of crude or finished products and their transportation will be assured through this affiliation on the most favorable terms.

The board of directors is composed as follows: W. H. Howard, Q.C., chairman of the board, advocate; L. B. Wolters, president, joint managing director of Petrofina; A. F. Campo, executive vice-president, oil executive; W. A. Arbuckle, investment trust manager; J. C. H. Dussault, Q.C., advocate; W. L. Forster, C.B.E., oil consultant; L. A. Forsyth, Q.C., president, Dominion Steel Co., Limited; J. Moreau de Melen, joint managing director of Petrofina; F. E. Notebaert, chairman of Sogémines; Jules R. Timmins, president, Hollinger Consolidat-

ed Gold Mines Ltd.; H. Blaise, president of Sogémines; H. Lafond, chairman of the Banque de l'Union Parisienne.

The management and the staff will be, with very few exceptions, all Canadians; and it is the policy of the company to give Canadian employees preference and the maximum opportunities for the future.

Mr. Campo, with his 27 years of experience in the Canadian oil business, will be the chief executive in Canada.

The authorized capital of the company is \$50,000,000. The issued capital will be \$25,000,000, out of which \$15,000,000 wil be subscribed by Petrofina for itself, its employees or its shareholders; \$5,000,000 will be privately subscribed and \$5,000,000 will be offered to the Canadian public through W. C. Pitfield & Company, Limited and McLeod, Young, Weir & Company Limited in the first half of October.

The cooperation on a large scale of Belgian and French capital has been made possible only by the comprehension that has been shown by the Belgian and French authorities.

Petrofina thinks that it has chosen a favorable timing for the creation of this company. The building of the refinery and of the distribution installations or outlets will provide work for a great many Canadian suppliers and hundreds of Canadian workers.

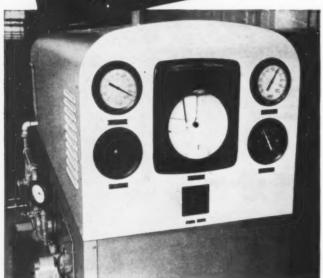
It is confident that the wholehearted and full cooperation of every shareholder, member of the board, member of the management and the staff will make this venture a success.



Just before its opening on October 8, 1953, stands the first Petrofina service station on this continent. The hood covering the identification sign was taken down as part of the opening program.



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With this automatic equipment, processing is always under precise control. Thus moisture content—important to luster and clarity—can be controlled exactly. A uniform product is assured at all times, and extra labor for reworking is avoided.

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### PEOPLE in the Industry

#### M. C. Vaughan Promoted



M. C. Vaughan

Promotion of Melville C. Vaughan from salesman to sales manager of the Cleveland, Ohio, office has been announced by Witco Chemical Co., of New York.

Mr. Vaughan joined Witco in 1932 as a chemist in the New York laboratory and was transferred to the Cleveland sales force in 1947. He was graduated by University of Illinois and is a member of American Chemical Society, Rubber Division; Akron Rubber Group; Buffalo Rubber Group; and Cleveland Paint Production Club.

#### OIIC Appoints J. F. Campbell

The appointment of John F. Campbell, of Chicago, as Midwest regional supervisor for the Oil Industry Information Committee of the American Petroleum Institute was announced by Executive Director H. B. Miller. The promotion was effective November 1.

Mr. Campbell, senior district representative for the OIIC in the Great Lakes district, has been with the Information Committee since June, 1950. He started in the New England office, and was promoted to the Great Lakes area June 1, 1952.

His appointment completes the establishment of a regional supervisory

group. Previously announced were the promotions of E. E. Robinson, of Philadelphia, to Eastern regional supervisor, and M. J. Rupp, of Denver, Colo., to Western regional supervisor.

Mr. Campbell's territory will embrace the Great Lakes, Minnesota-Dakotas, Kentucky-Ohio-Tennessee, and Missouri-Iowa-Nebraska district offices.

#### H. J. Crawford Dies

Harry Jennings Crawford, director and chairman of the board of Quaker State Oil Refining Corp., died November 3, 1953, in Oil City Hospital two weeks after an operation. He was 86 years old.

Mr. Crawford was a pioneer in Venango County's oil industry, a financier, industrial leader and philanthropist. He directed his many interests from the Emlenton First National Bank, where he was president. His oil interests were extensive, extending to all parts of the country. He was honored last May at the International Petroleum Exposition in Tulsa, Okla., as "a pioneer of pioneers" in the oil and gas industry.

He was director of Columbia Gas and Electric Corporation, New York; director of Manufacturers Light and Heat Company, Pittsburgh, and Pennsylvania Fuel and Supply Company, Emlerton

Also he was a director of Mountain Fuel Supply Company, Devonian Oil Company, Reno Oil Company. He was an organizer and director of the Talon Fastener Company and a director of the Lone Star Gas Company.

Mr. Crawford also served as a trustee of Grove City College, Grove City, Pa. Crawford Hall, the college's administration building, was named for him.

#### Foote Adds Mineralogist

Carmine J. Venuto recently joined Foote Mineral Company's research and development department as a mineralogist. A graduate of City College of New York in 1948, Mr. Venuto received his M.A. degree at Harvard in 1951 and was with New Jersey Zinc Co., at Franklin, N. J., before going to Foote.

#### **Emery Promotes Moore**



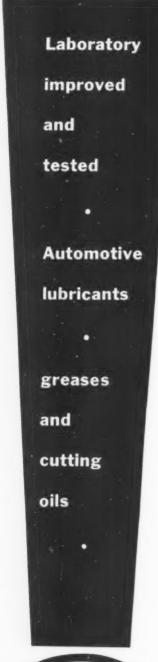
Alexander Moore

Emery Industries, Inc., announces the appointment of Alexander Moore to its development and service department. According to N. A. Ruston, director of the department, Mr. Moore will be associated with both the development of new products and technical service on Emery's complete line of fatty acids, plasticizers and textile products.

Mr. Moore graduated from Harvard University where he majored in economics and chemistry. Since the beginning of his association with Emery four years ago, he has been serving in various technical capacities in both production and application research.

#### R. Cubicciotti Heads A.P.I. Lube Committee

Rudolph Cubicciotti, vice-president of L. Sonneborn Sons, Inc., petroleum refiners and manufacturing chemists, has been elected chairman of the American Petroleum Institute Lubrication Committee for the year 1954. He will succeed G. T. Dougherty of Standard Oil Company (Indiana). Mr. Cubicciotti has been active in the American Petroleum Institute for many years and has served on the Lubrication Committee since 1936.





**Penola Oil Company** 

NEW YORK 19, N. Y.

#### John Wishnick Heads Witco's Production

John H. Wishnick, formerly superintendent of the Witco Chemical Company's Chicago plant, has been appointed Vice-President in Charge of Production and transferred to Witco's headquarters in New York.

John V. Roach, assistant superintendent at Chicago since 1952, replaces Mr. Wishnick as superintendent.

Mr. Wishnick became superintendent at Chicago in 1952, having served two years as manager of Continental Carbon Company's oil black division at Westlake, La.

He was graduated by the University of Oklahoma in 1948 with a B.S. degree in petroleum engineering. He is a member of the American Institute of Chemical Engineers, American Chemical Society, and Chemist Club of New York City. He served four years with the Army Air Corps.

Mr. Roach joined Witco in 1948 as chemical engineer. Prior to that time he was affiliated with the Grasselli Chemicals Division, E. I. duPont de Nemours & Co., at Cleveland, Ohio.

Mr. Roach, a native of Chicago, is a graduate of Illinois Institute of Technology, from which in 1947 he received a B. S. degree in chemical engineering. He served three years with the U. S. Navy, He is a member of the Naval Reserve and of the American Institute of Chemical Engineers.

#### Witco Promotes Vaccaro



M. D. VACCARO

Witco Chemical Company has announced the promotion to Eastern sales manager of Michael D. Vaccaro, who has been active in the Witco sales force in Pennsylvania, New Jersey, and New York.

A native New Yorker, Mr. Vaccaro joined Witco in 1937 as a member of the New York office traffic department. He is a member of American Chemical Society; New York Rubber Group; Philadelphia Ink Production Club; Philadelphia Rubber Group; and the American Chemical Industry Salesmen's Association.

Memorial Address . . . Continued from page 31

gineers and a member of the American Society of Lubrication Engineers.

He was active in civic affairs and devoted untiring efforts to the work of his church and his community.

The Cato Oil & Grease Company stands as a monument to the ambitions and tireless efforts of Mr. Corbett. His friends will long remember him as vigorous, active and with a deep love of human souls.

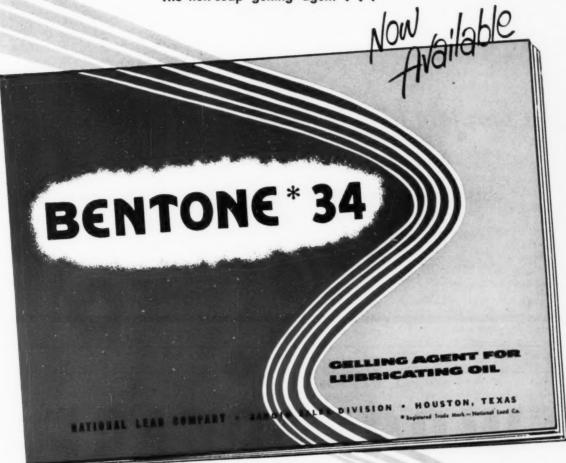
Jim was a prominent member of our industry, an outstanding citizen in his community and a true and esteemed friend of all who had the privilege of knowing him. We here record with pride his many achievements and his devotion to his family, his church, his friends and his business.

The NLGI and the petroleum industry will long owe a great debt of gratitude to Jim Corbett for the outstanding service which he has rendered.

His passing creates a void not only in the industry, but also in the lives of his friends and associates, which many of us here will carry to our own passing when we, with God's Will, will again join with him in the life to come.

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### Industry NEWS

#### **Steel Container Directory**

A 1953-1954 DIRECTORY of steel shipping container manufacturers, covering by volume 95 per cent of total industry production, has just been published by the Steel Shipping Container Institute, 600 Fifth Avenue, New York 20.

In the new directory are tables providing quick product-manufacturer cross-reference and addresses for manufacturers' plants and offices. Among the factual data presented are statistics on annual production of various container types and their uses by industries, historical material, general information on container specifications, and recent developments in exterior and interior container coating research.

"For the last half-century, the petroleum, chemical, paint, varnish and lacquer, food and other industries have depended upon steel drums and pails for the safe, efficient transportation of a myriad of products. The two-decade period between World Wars I and II saw annual demand for steel drums increase twelve-fold and a corresponding growth in the production of steel packages and pails.

"Today's annual production of the industry is valued at a quarter billion dollars. The industry regularly employs approximately 12,000 people and ranks second only to the automotive industry in the nation's consumption of sheet metal.

"Steel shipping containers have become an economic necessity and all major industrial users will testify that there is no substitute for steel drums and pails.

"The industry is constantly trying to improve its products and in line with this goal, the Steel Shipping Container Institute sponsors a comprehensive research and development program at Battelle Memorial Institute. As a result of this program many more products are now being satisfactorily packaged in steel.

"Industry emphasis will continue to be on highest quality containers at lowest possible cost, thereby demonstrating further to American industry that 'It's Better to Ship in Steel'," the DIRECTORY states.

#### Two Petroleum Firms Use Closed Circuit Television

Two of the nation's largest petroleum firms, Esso Standard Oil and Atlantic Refining, claim to be first in the oil industry to realize the unique advantages modern electronics offers in presenting important sales and marketing messages to regional staffs.

Through the medium of the closed circuit television service of the Du Mont Television Network, it was possible for these organizations to present new products to their staffs in widely scattered areas without moving one person outside a home territory.

The hour-long Esso show, complete with several elaborate settings, originated in the New York studios of the Du Mont network. It reached 1800 members of sales and administrative groups in 14 cities from Boston to New Orleans with the entire story of the product, "Total Power Esso Extra Gasoline."

The Atlantic introduction of new "Premium Motor Oil," from the stuios of WFIL-TV, Philadelphia, was received by 800 persons gathered in seven cities from Providence to Jacksonville

Packed into these presentations were visual details and demonstrations of the new product through use of live action and film strips, outlines of development and manufacture of the products, and marketing, sales and advertising plans.

The Du Mont service also made possible appearance of top echelon personalities of both companies to expound policy and plans.

Each show required weeks planning. Each organization through its advertising agency submitted to Du Mont an outline of the shows. Network officials and advertising agency and firm executives then met to shape overall scheduling. At this point, trained television experts (directors, floor crews, electricians, cameramen) moved in to assist with final preparations, timing, rehearsal, and similar production details.

Meanwhile, Du Mont obtained cable clearances, hooked necessary lines into reception points, and generally pinned down details to insure synchronization of video and audio at each outlet.

There are many reasons why these companies utilized closed circuit.

Esso officials listed these three main reasons: "(1) It is the most visual and effective way of fully informing field forces of a new product, (2) only the most modern means of communication was appropriate to introduce a modern petroleum product, and (3) because it was a saving of time and cost, eliminating the necessity of bringing more than 1800 people to a central point for a two or three day meeting."

Atlantic officials said closed circuit proved a time and cost saver, was visually effective, and was excellent in



## NILES

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providing a captive audience, sustaining interest and attention.

Morris Mayers, manager of Du Mont's closed circuit service, points out there is no hard and fast rule governing costs, that they are contingent on elaborateness of the program, range of geographical coverage and number of cities reached in that area, and the number of persons accommodated at each reception point.

In closed circuit operations Du Mont has handled to date, Mr. Mayers said, costs have ranged on a per capita basis from \$3 for a local presentation to \$20 for a job involving wide coverage.

#### **Deep Rock Acquires Stock**

Deep Rock Oil Corporation has acquired all the capital stock of Hugoton Plains Gas and Oil Company, according to an announcement by W. H. Garbade, Deep Rock president.

In a letter to the stockholders, it was revealed that the consideration amounted to \$1,150,000 in cash and 20,000 shares of Deep Rock's common stock

The newly acquired company, which is now headquartered at the Atlas Life Building, Tulsa, will function as an independent subsidiary. It operates 178 producing gas wells in the Hugoton field in western Oklahoma and Kansas, and has a products extraction plant at Tyrone, Okla. Its properties are fully developed, and underground gas reserves are reported at more than 500 billion cubic feet.

To acquire and develop its properties and plant, Hugoton Plains incurred a heavy debt, no part of which is being assumed by Deep Rock. However, the stockholders were advised that the equity in the gas company could be expected to expand materially as a result of rising prices for gas and operating improvements, thus providing an attractive long-term benefit to Deep Rock from this investment.

Combined with the shut-in gas reserves which Deep Rock owns in the Many Islands field in Alberta, Canada, the purchase of Hugoton Plains has materially strengthened Deep Rock's position in the gas industry.

Constitutional amendments earmarking gasoline taxes and motor vehicle registration fees for highway purposes have now been adopted in 24 states.

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#### Jerry Robertson Publishes Answers to 15 Years Of Accumulated Questions

ABC's of Oil, a book by Jerry Robertson, has just been published. Mr. Robertson is the colorful owner of the Tri-State Oil Report in Evansville, Ind. This 86-page book is a veritable encyclopedia of the oil industry. The 18 subjects covered are told in language anyone can understand and are profusely illustrated.

A few of the subjects are: How Oil Was Formed; Wells Famous in Oil Industry; What Does Royalty Bring Each Month to a Landowner; Geology and Oil; Map of the Basin Areas of the United States; Possible Producing Areas of North America; How to Promote a Test Well on or Near Your Land; How to Get a Job in the Oil Business; Short Stories from the Oil Fields.

Mr. Robertson is a Texan and a smart oil reporter. His knowledge comes from 34 years experience in the oil industry. For the past 15 years he has been writing a commercial scout report. His effort in this book has been to better acquaint new oil firm employees, traders, landowners and speculative investors with the facts and "mechanics" of oil field work.

ABC's of Oil is available from Petroleum Publishers, 118 N. W. First Street, Evansville 8, Ind. The price is \$2.10 each, postpaid.

#### Division of Refining Plans Technical Abstract Service

The Division of Refining of the American Petroleum Institute has announced that its new technical abstract service will be inaugurated in January.

Designed to save time, money and effort for its subscribers, the new service will cover 100 of the most useful petroleum and chemical publications. A bulletin will be published weekly and multiple copies will be sent to subscribers.

The service is being established at the request of the industry, and as a result of several years of study by various committees in the institute. Subscriptions will not be confined to the oil industry, however, and all interested parties may obtain the service by contacting the Division of Refining. By covering the petroleum journals, and abstracting the contents, the new technical abstract service, according to the Division of Refining, will provide the following advantages to subscribers:

- 1. Companies will save money on time used by their men in looking through journals.
- 2. The problem of missing worthwhile items because of too little time to read so much will be solved.
- 3. Faster coverage of the literature will be achieved.

- A high grade of abstract will be made available.
- Economic waste from duplication of work among companies now abstracting for their own use will be eliminated.
- 6. Large companies now abstracting these journals will save up to 90% of the cost of such service.
- 7. The lower cost per company will make such service available to small and medium size companies for the first time.



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2113 MEDILL AVENUE CHICAGO 47, ILLINOIS 8. Copies of abstracted articles will be available.

 Library technical manpower, always in short supply, will be conserved for other worthwhile company library functions.

10. Individual company libraries can establish card search files by printing file cards of the abstracts, Multilith master sheets of the bulletin pages will be available to subscribers at an additional nominal cost. The costs for the new service are as follows:

Basic subscriptions

5 copies each week-\$3,000 per year. Annual cost of additional weekly copies

- a. 1-49 copies (mailed in 10 or less packages each week)—\$15 per copy.
- b. 50-99 copies (mailed in 10 or less packages each week)-\$12 per copy.

 c. 100 copies or more, (shipped to 10 or less points, express or parcel post collect)—\$8 per copy.

Multilith master sheets—10c per master.

For further information: Sample copies of the bulletin and additional information may be obtained by writing to Louis C. Stork, Editor, Technical Abstract Service, American Petroleum Institute, 50 West 50th Street, New York 20, N.Y.

#### "Lubricant Testing"

By E. G. ELLIS, B. Sc., F. Inst. Pet.

Published by Scientific Publications (G.B.) Ltd., 8 Walker Street, Wellington, Shropshire, England. 232 pages, \$6.00.

Practical experience of lubricant testing over 25 years has proved that the method books of standardizing bodies, invaluable as they are, are not in themselves sufficient guide for the oil and grease chemist. This is particularly true in the case of smaller firms where the chemist's duties combine those of routine testing with lubricant development and the investigation of complaints.

This book fills this gap and in addition will be of great help to beginners in all oil laboratories, chemists in various industries whose primary concern is with products other than lubricants, and nonchemcial personnel such as engineers and salesmen who wish to acquire some insight into the significance and application of the tests used in the standardization and investigation of oils and greases.

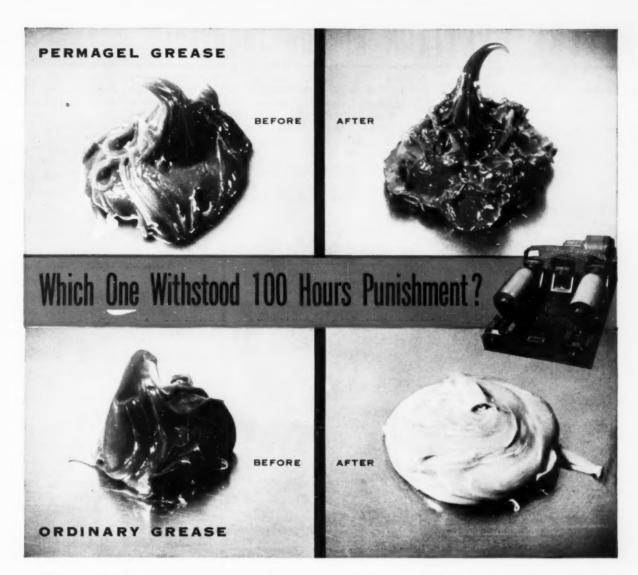
The tests considered have been grouped under three main headings: Fundamental properties such as density, viscosity, etc.; Composition; Investigation of Behavior which includes functional testing. The method of presentation and very numerous illustrations make this work invaluable to both young and fully experienced chemists, sales personnel, and anyone who is, or who may be, concerned with lubrication problems.

#### California Texas Appoints Agency

A New York agency has been appointed by the California Texas Oil Company Ltd., to develop merchandising and point-of-sale material as well as dealer training programs, including films, for its network of Caltex service stations in 67 countries.







The Shell Roll Tester is used to measure mechanical stability of greases. Within a cylinder spinning at 160 rpm, grease is squeezed between an 11-pound roller and the inside wall of the cylinder. As little as four hours of this kind of punishment often is enough to cause loss of stability—indicating breakdown of gel structure.

A grease thickened with Permagel, Attapulgus' new gelling agent, was put to the test, together with an old-style commercial wheel bearing grease. The two were spun inside the twin cylinders shown above—not for just four hours, or ten, or fifty—but for 100 hours! The "before and after" photographic record above dramatically shows the results. Before the test both the Permagel grease and the ordinary grease were firm and consistent. At test's end the Permagel grease had still retained its original characteristics, while the other grease had completely collapsed and was emulsified with air.

This demonstration of resistance to shear indicates the outstanding mechanical stability which can be achieved with Permagel . . . and is only one of many important reasons why Permagel is an ideal bodying agent for high quality, multipurpose greases.

We'd like to tell you the full story of Permagel... and how it can be used effectively in your grease products. Our comprehensive Bulletin P-53 and a free sample of Permagel for evaluation are yours for the asking, and we can also process your base oil in our modern grease pilot plant.

ATTAPULGUS Minerals & Chemicals Corporation

DEPARTMENT E



### FUTURE MEETINGS of the Industry

#### JANUARY, 1954

11-15 Society of Automotive Engineers (annual meeting and engineering display), Sheraton-Cadillac and Statler Hotels, Detroit, Mich.

#### FEBRUARY, 1954

- 8-10 Missouri Petroleum Assn. (annual convention), Chase Hotel, St. Louis, Mo.
- 15-17 American Petroleum Institute (Lubrication Committee), Sheraton-Cadillac Hotel, Detroit, Mich.
- 17-18 Iowa Independent Oil Jobbers Assn., Fort Des Moines Hotel, Des Moines, Iowa.

#### **MARCH, 1954**

- 1-5 American Society for Testing Materials (spring meeting), Shoreham Hotel, Washington, D. C.
- 2-4 Society of Automotive Engineers (national passenger car, body, and materials meeting), Hotel Statler, Detroit, Michigan.
- 3-5 American Petroleum Institute (Division of Production, Southwestern District), Rice Hotel, Houston, Tex.
- 8-10 American Inst. of Chemical Engineers, Statler Hotel, Washington, D. C.
- 8-10 Texas Oil Jobbers Assn. (annual convention exhibit), Baker Hotel, Dallas, Texas.
- 16-18 Ohio Petroleum Marketers Assn. (annual convention and marketing exposition), Deshler-Hilton Hotel, Columbus, Ohio.
- 17-19 American Petroleum Institute (Division of Production, Mid-Continent District), Skirvin Hotel, Oklahoma City, Okla.

#### **APRIL, 1954**

- 5-7 American Society of Lubrication Engineers, Netherland-Plaza Hotel, Cincinnati, Ohio.
- 8-9 American Petroleum Institute (division of production, Rocky Mountain district), Townsend Hotel, Casper, Wyo.

- 12-15 Society of Automotive Engineers (national aeronautical meeting, aircraft engineering display, and aircraft production forum), Hotel Statler, New York, N. Y.
- 14-16 National Petroleum Assn. (51st semi-annual meeting), Cleveland Hotel, Cleveland, Ohio.



#### MAY, 1954

- 2-4 Independent Petroleum Assn. of America (midyear meeting), Cosmopolitan Hotel, Denver, Colo.
- 3-5 American Petroleum Institute (Lubrication Committee), Skytop Lodge, Skytop, Pa.
- 3-7 American Petroleum Institute (safety & fire protection committees, midyear meeting), Chase-Park Plaza, St. Louis, Mo.
- 6-7 American Petroleum Institute (division of production, Pacific Coast district), Statler Hotel, Los Angeles, Calif.

- 10-12 American Petroleum Institute (Division of Transportation, Products Pipe Line Conference), Warwick Hotel, Philadelphia, Pa.
- 10-13 American Petroleum Institute (Division of Refining, Midyear Meeting), Rice Hotel Houston, Texas.
- 16-19 American Inst. of Chemical Engineers, Springfield, Mass.
- 17-18 Empire State Petroleum Assn., Roosevelt Hotel, New York, N. Y.
- 17-19 American Petroleum Institute (Division of Marketing, Midyear Meeting), Cosmopolitan Hotel, Denver, Colo.
- 24-25 Packaging Institute (petroleum packaging committee), Cleveland, Ohio.
- 31- American Petroleum Institute June5 (division of production, midyear committee conference), San Francisco, Calif.

#### JUNE, 1954

- 6-11 Society of Automotive Engineers (summer meeting), The Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.
- 13-18 American Society for Testing Materials (annual meeting and exhibits), Sherman Hotel, Chicago, Ill.
- 17-19 American Petroleum Institute (Division of Production, Eastern District), Greenbrier Hotel, White Sulphur Springs, W. Va.
- 21-25 American Inst. of Electrical Engineers (combined summer and Pacific general meeting), San Francisco, Calif.

#### AUGUST, 1954

16-18 Society of Automotive Engineers (national West Coast meeting), Los Angeles, Calif.

#### SEPTEMBER, 1954

12-16 Society of Automotive Engineers (national tractor meeting), Schroeder Hotel, Milwaukee, Wis.

- 12-16 American Inst. of Chemical Engineers, Colorado Hotel, Glenwood Springs, Colo.
- 13-14 Packaging Institute (petroleum packaging committee), Philadelphia, Pa.
- 15-17 National Petroleum Assn. (52nd annual meeting), Traymore Hotel, Atlantic City, N. J.

#### OCTOBER, 1954

4-9 Society of Automotive Engineers (national aeronautic meeting), aircraft engineering display, and aircraft production forum, Hotel Statler, Los Angeles, Calif.

#### Week of

- Oct. 18 Society of Automotive Engineers (national transportation meeting), Boston, Mass.
- 25-27 National Lubricating Grease Institute (22nd annual meeting), Mark Hopkins Hotel, San Francisco, Calif.
- 25-29 American Institute of Electrical Engineers (fall general meeting), Chicago, Ill.
- 26-27 Society of Automotive Engineers, national diesel engine meeting, Hotel Statler, Cleveland, Ohio.

#### NOVEMBER, 1954

- 1-2 Independent Petroleum Assn. of America (annual meeting), Shamrock Hotel, Houston, Texas
- 4-5 Society of Automotive Engineers (national fuels and lubricants meeting), Mayo Hotel, Tulsa, Okla.
- 8-11 American Petroleum Institute (34th annual meeting), Conrad Hilton Hotel and Palmer House, Chicago, Ill.
- 28 to American Socy. of Mechanical Dec. 3 Engineers, Statler Hotel, New York, N. Y.
- 29-30 Packaging Institute (petroleum packaging committee), New York, N. Y.

#### DECEMBER, 1954

12-15 American Inst. of Chemical Engineers (annual meeting), Statler Hotel, New York, N. Y.

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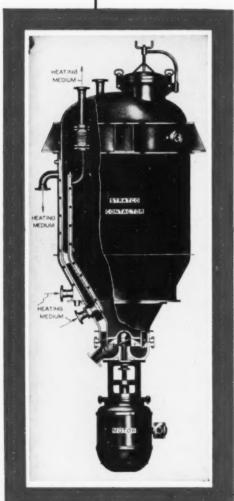
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